



# Office of Environment, Safety, and Health

## Proposed Revisions to ORPS



Presented at:  
EFCOG ISM Spring 2006 Meeting  
Albuquerque, New Mexico  
April 26, 2006

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# *Status of Occurrence Reporting*

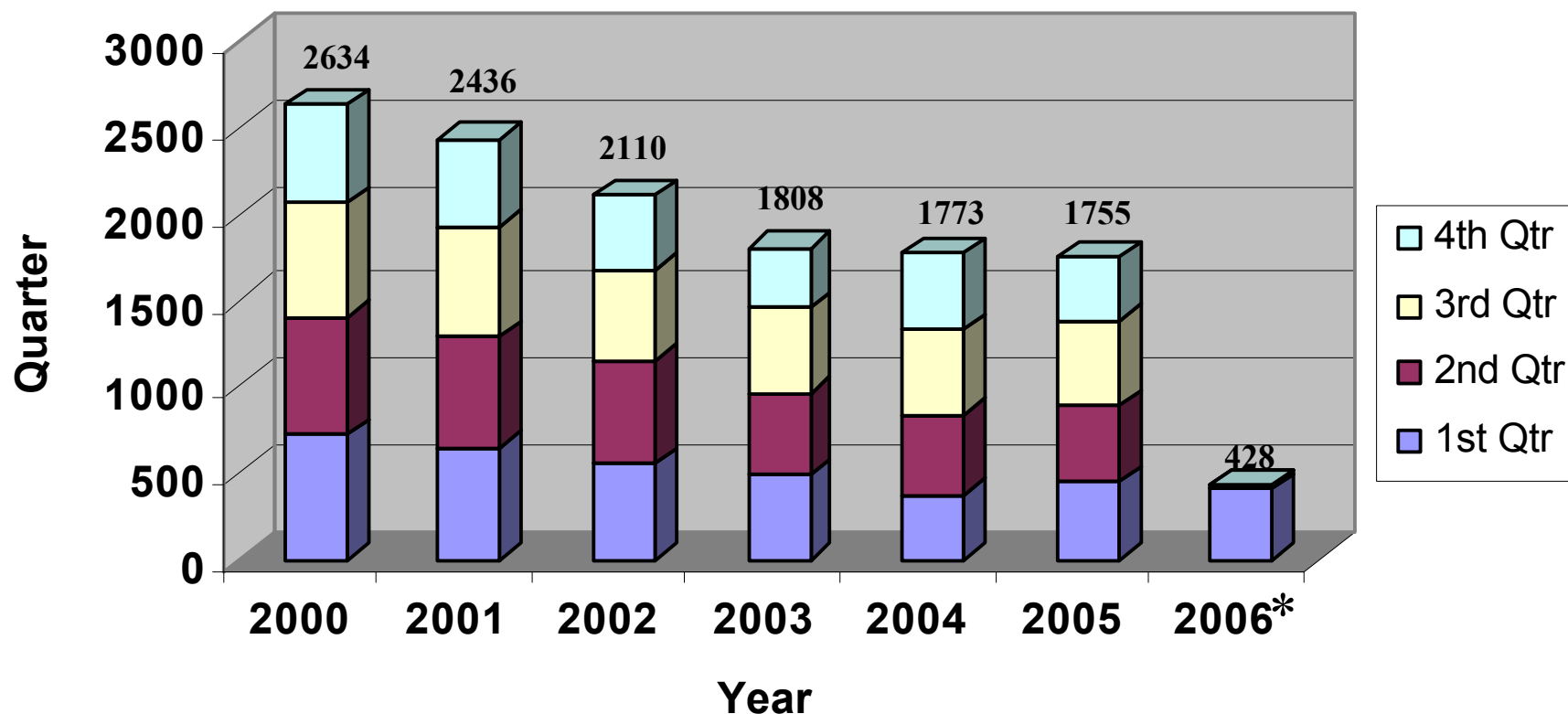
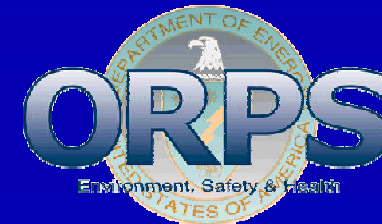


- ORPS was implemented on April 1, 1991.
- The latest Order/Manual changes were approved on 8/19/03, and the redesign was effective on 12/1/03.
- On 10/1/05, there was a major change to the organizational codes in ORPS to reflect the current DOE reporting structure.
- Revisions to the Manual and Guides are being drafted to update program requirements and reporting criteria due to lessons learned.
- There are more than 52,500 occurrence reports containing over 55,900 occurrences.





# Number of Occurrences



\*Partial Year





# Changes to OR Program Requirements



- FR approval required on all reports.
- Value was lost not having causal analysis reported for SC 4s.  
How can we best forward this causal information to DOE?
- Change to the definitions of the Significance Categories.
  - **SC 1 – Severe Impact**
  - **SC 2 – High Impact**
  - **SC 3 – Moderate Impact**
  - **SC 4 – Minor Impact**
- Currently, Performance Analysis Reports go to line management.  
Following this change, a copy of what is provided to PSOs will be sent to EH.
- Additional specificity is provided regarding information to include in SCI-DI reports.







# ***Changes to OR Program Requirements*** (cont'd.)



- Addition of a field to code identified weaknesses in the QA Program. These data will be used to trend to Management Systems and to focus assessments to improve operations.

- A. Program**
- B. Training and Qualification**
- C. Quality Improvement**
- D. Documents and Records**
- E. Work Process**
- F. Design**
- G. Procurement**
- H. Inspection**
- I. Management Assessment**
- J. Independent Assessment**
- K. Software QA**
- L. None**

**A through J refer to the ten QA criteria in QA Order 414.1C and Rule 10 CFR 830.**





# Revision to Occurrence Reporting Model



Significance Category	Timelines <sup>1</sup>	Prompt Notification	Investigation	Causal Analysis	Report Approvals	Corrective Actions	Corrective Action Closures	Corrective Action Effectiveness	Lessons Learned <sup>3</sup>
Operational Emergencies (defined by DOE O 151.1A)	Cat: ASAP PN: NLT 15 min if further classified; NLT 30 min if not further classified WN: COB next business day not to exceed 80 hrs UR: As needed FR: 45 days	DOE Facility Representative & DOE Headquarters Operations Center (OC)	Team with Trained Investigator. DOE Consider Accident Investigation.	Root Cause Determined	DOE Facility Representative & DOE Program Manager Approval	Remedy Problem, Prevent Recurrence, & Preclude Similar Problems	Contractor Document & Independently Verify	Contractor Assess Effectiveness to Prevent Recurrence	Enter into DOE LL Database & Coverage in OE Summary
Significance Category 1 Reportable Occurrence	Cat: NLT 2 hrs PN: NLT 2 hrs WN: COB next business day not to exceed 80 hrs UR: As needed FR: 45 days	DOE Facility Representative & DOE Headquarters OC	Team with Trained Investigator. DOE Consider Accident Investigation.	Root Cause Determined	DOE Facility Representative & DOE Program Manager Approval	Remedy Problem, Prevent Recurrence, & Preclude Similar Problems	Contractor Document & Independently Verify	Contractor Assess Effectiveness to Prevent Recurrence	Enter into DOE LL Database & Coverage in OE Summary.
Significance Category R. Includes All Recurring Category 1, 2, 3, and/or 4 Reportable & Non-Reportable Occurrences	Cat: NLT 2 hrs WN: COB next business day UR: As needed FR: 45 days		Trained Investigator	Root Cause Determined	DOE Facility Representative Approval	Remedy Problem, Prevent Recurrence, & Preclude Similar Problems	Contractor Document & Independently Verify	Contractor Assess Effectiveness to Prevent Recurrence	Enter into DOE LL Database & Optional Coverage in OE Summary
Significance Category 2 Reportable Occurrence	Cat: NLT 2 hrs PN: NLT 2 hrs WN: COB next business day UR: As needed FR: 45 days	DOE Facility Representative (DOE HQ OC at Field Office Discretion) <sup>2</sup>	Trained Investigator	Apparent Cause Determined	DOE Facility Representative Approval	Remedy Problem & Prevent Recurrence	Document & Verify by Sampling	Optional	Consider entering into DOE LL Database & Optional Coverage in OE Summary
Significance Category 3 Reportable Occurrence	Cat: NLT 2 hrs PN: NLT 2 hrs WN: NLT 2 business days UR: As needed FR: 45 days	DOE Facility Representative (DOE HQ OC) <sup>2</sup>	Critique/ Fact Finding	Apparent Cause Determined	DOE Facility Representative Approval	Remedy Problem	Document (Verification Optional)	Optional	Per Site Specific Process
Significance Category 4 Reportable Occurrence	Cat: NLT 2 hrs PN: NLT 2 hrs (as required) Short Form Report: NLT 2 business days	(DOE Facility Representative & DOE HQ OC) <sup>2</sup>	Critique/ Fact Finding	Apparent Cause Determined	DOE Facility Representative Approval	The reporting of corrective actions and lessons learned is optional. Reportable and non-reportable occurrences are managed per contractor-specific corrective action programs.			





# Reporting Criteria Changes



- New Injury Criterion – Group 2A (new #3), SC 2
  - Any single occurrence resulting in an occupational injury that requires inpatient hospitalization for 5 days or more, commencing within 7 days from the date the injury was received.  
Note: This criterion is similar to one of the thresholds for initiating a Type B accident investigation. If such an investigation is begun, the event should be reported under Criterion 10(1), as well as under this criterion if the injury so warrants.
- New Injury Sub-Criterion – Group 2A (currently #6) (new e), SC 3
  - Causes (1) a concussion or (2) a loss of consciousness due to an impact to the head.





# Reporting Criteria Changes (cont'd.)



## ■ Revised Fire Criteria – Group 2B

- (1) \*1 Any unplanned fire or explosion within primary confinement/containment boundaries of a nuclear facility, except a small fire that self-extinguishes in 10 minutes or less.
- (2) \*2 Any unplanned fire or explosion in a nuclear facility that:
  - a) Activates a fixed fire suppression system (e.g., Halon® or sprinkler heads), or
  - b) Is extinguished manually using fire protection equipment, or
  - c) Disrupts normal operations in the facility, or
  - d) Is a small fire within primary confinement/containment that self-extinguishes in 10 minutes or less.





# Reporting Criteria Changes (cont'd.)



- New Hazardous **Electrical** Energy Control Criteria – Group 2, Subgroup C (still subject to change based on ESIP feedback)
  - (1) 2 Failure to follow a prescribed hazardous **electrical** energy control process (e.g., lockout/tagout) or disturbance of a previously unknown or mislocated hazardous **electrical** energy source resulting in a person contacting (burn, shock, etc.) hazardous **electrical** energy.
  - (2) 3 Failure to follow a prescribed hazardous **electrical** energy control process (e.g., lockout/tagout) or a site condition that results in the unexpected discovery of an uncontrolled hazardous **electrical** energy source. This criterion does not include discoveries made by zero-energy checks and other precautionary investigations made before work is authorized to begin.







# Reporting Criteria Changes (cont'd.)



- New Hazardous Energy Control (**Other**) Criteria – Group 2, Subgroup D (still subject to change based on ESIP feedback)
  - (1) 2 Failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout) or disturbance of a previously unknown or mislocated hazardous energy source (e.g., electrically powered mechanical hazards, steam, pressurized gas) resulting in a person contacting (burn, injury, etc.) hazardous energy.
  - (2) 3 Failure to follow a prescribed hazardous energy control process (e.g., lockout/tagout) or a site condition that results in the unexpected discovery of an uncontrolled hazardous energy source (e.g., electrically powered mechanical hazards, steam, pressurized gas, etc.). This criterion does not include discoveries made by zero-energy checks and other precautionary investigations made before work is authorized to begin.





# Reporting Criteria Changes (cont'd.)



- Revised PISA Criterion – Group 3B (2) SC 4 (was 3)

- Added a Note, as follows:

[Note: When a potential inadequacy of a documented safety analysis is found, this would be initially reported under Criterion 3B(2). If further analysis results in a positive USQ determination, then the occurrence should be updated to be categorized under Criterion 3B(1). If there is a negative USQ determination, then the categorization should remain as an SC 4 under Criterion 3B(2).]





# Reporting Criteria Changes (cont'd.)



- Revised Stop Work/Shutdown Criterion – Group 4B (1) SC \*2
  - An unplanned facility or operations shutdown (i.e., a change of operational mode or curtailment of work or processes) directed by a DOE Field Element Manager or Contracting Officer for safety reasons.
- Revised Evacuation Criterion – Group 4B (4) SC 3
  - A facility evacuation other than a precautionary evacuation or an evacuation due to false alarms or spurious alarms (e.g., due to electronic noise, radon/thoron decay). If the event fell under another reporting criterion, then evacuation should be reported as well by noting multiple reporting criteria for the single occurrence.





## ***Reporting Criteria Changes (cont'd.)***



- Revised Shutdown Criterion – Group 4B (6) SC \*4
  - A facility or operations shutdown (i.e., a change of operational mode or curtailment of work or processes) directed by management or a DOE employee (other than a Field Element Manager or Contracting Officer) for safety reasons.





# Reporting Criteria Changes (cont'd.)



- Revised Environmental Release Criterion – Group 5A (4) SC 4
  - Any release (onsite or offsite) of a hazardous substance, material, waste, or radionuclide from a DOE facility that must be reported to outside agencies in a format other than routine periodic reports. (However, oil or ethylene glycol antifreeze solution spills of less than 10 gallons and with negligible environmental impact need not be reported in ORPS. For operations involving oilfield crude or condensate, any discharge not exceeding 100 barrels need not be reported under this criterion.)







# Reporting Criteria Changes (cont'd.)



- Revised RadCon criteria – Group 6B (2, 3, and 4)  
SC 2, 3, and 4
  - Added an additional exclusion area in each criteria:
    - (2) 2 Identification of onsite radioactive contamination greater than 100 times the total contamination values in 10 CFR 835 Appendix D and that is found outside of the following locations: Contamination Areas, High Contamination Areas, Airborne Radioactivity Areas, Radiological Buffer Areas, areas controlled in accordance with 10 CFR 835.1102(c), **and any non-posted area that is under the continual observation and control of an individual empowered to implement access and exposure control measures.** For tritium, the reporting threshold is 100 times the removable contamination values in 10 CFR Part 835, Appendix D.





# Reporting Criteria Changes (cont'd.)



- Revised RadCon criteria – Group 6B (2 and 3) SC 2 and 3
  - Added an additional note in each criterion:

(d) This does not apply to items and containers handled and stored onsite that meet DOT limits specified in 49 CFR 173.443.
- Modified Radiation Exposure criterion – Group 6C (2) SC 2
  - An exposure **estimated to exceed** the values for providing personnel dosimeters and bioassays as stated in 10 CFR 835.402(a) or 10 CFR 835.402(c) **and the failure to provide the monitoring addressed by those requirements.**





# Reporting Criteria Changes (cont'd.)



- Revised Management Concern criterion – Group 10 (2)  
SC 1-4
  - An event, condition, or series of events that do not meet any of the other reporting criteria, but is determined by the Facility Manager or **DOE/contractor** line management to be **a** safety concern **for that facility or** other facilities or activities in the DOE complex. **Or a noted noncompliance with worker safety and health requirements that, if not corrected immediately, could result in serious injury (e.g., working at heights without proper fall protection; failure to use proper PPE for electrical work; employee working in improperly shored/sloped trench or excavation).** The significance category assigned to the management concern should be based on an evaluation of the potential risks and associated corrective actions.





## *Reporting Criteria Changes (cont'd.)*



- Revised Near Miss criterion – Group 10 (3) SC 1-4
  - An event that does not meet any other ORPS reporting criterion where something physically happened that wasn't supposed to and significant consequences were avoided only by luck (i.e., no controls or protective equipment were in place to prevent a worse case scenario, or the controls or protective equipment were ineffective). The significance category assigned to the near miss should be based on an evaluation of the potential risks and associated corrective actions.





# Reporting Criteria Changes (cont'd.)



- New “secondary” DOE-directed reporting criterion – Group 10 (6) SC 4
  - Any event, condition, or series of events that is determined by DOE line management or the DOE Facility Representative who maintains oversight responsibility for the facility or activity, to meet a reporting criterion of this Manual, but which was not categorized as such by the Facility Manager within the time period allowed.

[Note: This is a secondary reporting criterion and does not require a separate occurrence report.]







# ***Quality of Occurrence Reports***



- Occurrence reports provide a large part of the operating experience data across the DOE complex.
  - Significant use of ORPS data is made for high-level DOE briefings
  - Program and Field Offices perform periodic and routine analyses.
  - Contractors analyze the data quarterly to identify trends and recurring events.
  - Contractors look for precursor events at other sites.
- Since the data are used for all of these purposes, the quality of occurrence reports needs to be consistently high.





# ***Quality of Occurrence Reports (cont'd.)***



- The report should enable the general reader to understand the basic “what, who, when, where, and how” of the event, the safety issues involved, and the actions taken.
- The Subject/Title and the first paragraph of the Occurrence Description should relay the essential nature of the event (i.e., a summary of the occurrence in newspaper style).
- All information should be clear and succinct. Avoid redundant and unnecessary text, and lengthy “log book” accounts, unless a discussion of the event in chronological order is considered essential to understanding the event.





# ***Quality of Occurrence Reports (cont'd.)***



- Complex and more significant occurrences should warrant a greater level of detail. Significance Category 4 occurrences would likely need only a short paragraph under Occurrence Description. However, all reports should present enough information so that the general reader understands why the event needs to be reported and what the effect is.
- Avoid jargon and uncommon or site-/facility-specific abbreviations and acronyms. If used, acronyms should be initially spelled out.





# Quality of Occurrence Reports (cont'd.)



- Unless necessary to record and explain the event (e.g., suspect/counterfeit items or material), use general descriptions of equipment, procedures, etc., rather than presenting lengthy detailed titles and the numbers and letters assigned to those items.
- Quantify the level of contamination, dose, release, and damage (e.g., estimate the acres of wildland burned) when possible, instead of merely stating a reportable limit was exceeded.
- Use active rather than passive voice whenever possible. For example, write, “***the electrician*** severed the conduit” rather than “the conduit was severed.”





# ***Quality of Occurrence Reports (cont'd.)***



- For suspect/counterfeit and defective items or material, also provide:
  - the manufacturer/supplier/vendor (including a contact, phone number, and web site),
  - the model and part numbers,
  - the quantity found,
  - why the item/material is suspect/counterfeit or defective,
  - how the item/material is being used
  - the method of detection (i.e., receipt inspection, craft inspection prior to installation, in-service inspection, or failure).
  - Finally, identify any resulting consequences and provide any photos via hyperlink, as appropriate.







# ***Quality of Occurrence Reports (cont'd.)***



- When appropriate for clarification, photos, sketches, and drawings must be maintained with the occurrence report record. In addition, sites are encouraged, but not required, to make photos, sketches, and drawings available via a web page, with the web page address included as a hyperlink in the ORPS report.





# ***SafeMark Status***



- The SafeMark Phase 2 (Version 2) rollout will commence in June, 2006.
- Databases will include:
  - ORPS
  - CAIRS
  - Authorization Basis
  - Safety Basis
  - Corrective Action Tracking
- Registration will be open to DOE and contractor community.
- A User's Group will be created, including a member from the different organizational groups.





# *Path Forward*



- Finalize revisions to documents (Manual and two Guides)
- Post on RevCom
- Make necessary software changes
- Get approval of revised documents
- Incorporate Manual into contracts
- Implement revision
- Put SafeMark into general use





# QUESTIONS?

